



## Lower Heater - Treater Temperature

### Applicable sector(s):

☒ Production ☐ Processing ☐ Transmission and Distribution

**Partners reporting this PRO:** Marathon Oil Company

**Other related PROs:**

## Technology/Practice Overview

### Description

Heater - treaters are used to treat oil emulsions, which are stable mixtures of oil, solids, and water. These units use thermal, gravitational, mechanical, and sometimes chemical, methods to break the emulsions and separate the crude oil from water. Elevated temperature is particularly effective in lowering oil viscosity and promoting phase separation, but requires fuel gas and causes volatile hydrocarbons, including methane, to vaporize and escape to the atmosphere from production tanks.

Partners find that heater - treater temperatures at remote sites may be higher than necessary, resulting in increased methane emissions. Vented emissions can be reduced by identifying the lowest practical heater - treater temperature in conjunction with product quality standards and other treatment factors.

### Principal Benefits

Reducing methane emissions was:

☐ A primary justification for the project ☒ An associated benefit of the project

### Operating Requirements

The combination of treatment parameters must meet an oil specification set by individual companies.

### Applicability

This practice applies to all heater - treater operations.

### Methane Savings

**142 Mcf/yr**

### Costs

Capital Costs (including installation)

None

Operating and Maintenance Costs (Annual)

☒ < \$100 ☐ \$100-\$1,000 ☐ > \$1,000

### Payback (Years)

☒ 0-1 ☐ 1-3 ☐ 3-10 ☐ > 10

## Methane Emission Reductions

Methane emission reductions will be a function of temperature reduction, throughput, and the extent to which other treating parameters and product quality can compensate for lower temperature. One partner achieved 142 Mcf/yr average savings in each of two applications.

## Economic Analysis

### Basis for Costs and Savings

Methane emission reductions of 142 Mcf/yr are representative of partner reported savings per heater- treater unit.

### Discussion

This practice can payback quickly in incremental labor and fuel gas savings, the principal benefits. While savings in methane emissions are incidental, fuel gas savings may be more substantial. There is no capital equipment required, however, there may be a higher de-emulsifier chemical cost to compensate for lower treating temperatures.